Player and Referee Roles Held Jointly: The Effect of State Ownership on China's Regulatory Enforcement Against Fraud

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ABSTRACT

This paper examines the impact of the prevailing state ownership in the Chinese stock market on corporate governance and the financial regulatory system respectively as the internal and external monitoring mechanisms to deter corporate fraud and protect investors. In line with the literature that state ownership exaggerates the agency problem, we find that the retained state ownership in privatised firms increases the incidence of regulatory enforcements against fraud. For the state-owned enterprises (SOEs), however, larger state ownership is associated with a lower incidence of enforcement actions. This is attributed to the mutual political affiliation of the fraudulent SOEs and the regulatory commission. A new regulation "*Solutions for Listed Firm Checks*" promulgated in March 2001 has mitigated this effect by empowering the regulatory commission to increase the severity of regulatory conditions. Our evidence confirms the improvement in the regulatory environment and investor protection in the Chinese stock market brought about by the regulatory reform and development.

KEY WORDS: Fraud, Enforcement, Corporate Governance, Regulatory Commission, Shareholder Protection, China

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1. Introduction

Although China has experienced dramatic development in its capital markets, the influence of the state remains dominant in many respects. The state controls nearly 80% of the listed firms in the Chinese stock market (Chen et al., 2009) and retains ownership in nearly half of the privatized listed firms (Chen et al., 2008). Meanwhile, the state remains influential in the legal and financial regulatory system, undermining judicial and regulatory independence (Chen, 2003; Allen et al., 2005; and Chen et al., 2005). Such institutional features have been found to affect the effectiveness of monitoring listed firms and investor protection, but its impact on regulatory inspection and enforcement against fraud is as yet under-researched. This paper intends to shed light on this issue.

The determinants of fraud have been widely discussed in the literature of finance, economics, law and business ethics. International evidence (Beasley, 1996; Dechow et al., 1996; Beasley et al., 2000; Unzun et al., 2004; and Chen et al., 2006) suggests that board independence measured by the proportion of independent or outside directors, and the presence of an audit committee help to enhance the internal monitoring mechanisms and consequently reduce the incidence of fraud. In addition to the board of directors, a supervisory board also plays a monitoring role for Chinese listed firms. Jia et al. (2009) and Ding et al. (2011), however, show that this is not effective in deterring fraudulent activities, but passively reacts to enforcement actions. Firth et al. (2005) show that the China's Securities Regulatory Commission (CSRC) (regulatory commission hereafter) is concerned about fraud because auditors are sanctioned for failing to detect and report certain material misstatement frauds. Chen et al. (2005) show that the regulatory commission is not a toothless tiger as its enforcement actions decrease the stock price of the fraudulent firms.

These studies have weaknesses in that they fail to consider the impact of state ownership of the listed firms on the effectiveness of external monitoring mechanisms, although Chow (1997), Anderson (2000), Chen (2003) and Allen et al. (2005) acknowledge that political connections play an important role in the Chinese legal and financial regulatory systems, and the laws and regulations are not effectively enforced when the politically powerful defendants are involved. We therefore expect that fraud inspection differs across firms with various strengths of political connections. In addition, the impact of exogenous regulatory changes has not been considered in the literature; in particular, the consequence of the new regulation "*Solutions for Listed Firm Checks*", promulgated

in 2001, has not been investigated. Finally, the data used in some of the studies were collected from newspapers and could miss some enforcement actions. This paper aims to remedy these shortcomings by arguing that state ownership plays an important role in the effectiveness of both corporate governance and legal/regulatory systems, as internal and external monitoring mechanisms respectively, and that regulatory changes also influence the regulatory environment.

To carry out our analysis, we include all regulatory enforcements of fraud from 1999 to 2008 in the Chinese stock market and respectively construct a firm-year sample and a matching-firm sample as robustness checks of each other. We classify the listed firms into state-owned enterprise (SOEs) and non-state-owned enterprises (non-SOEs). Our main findings are as follows. For non-SOEs, the ratio of state ownership is positively related to the incidence of regulatory enforcements against fraud. This confirms our prediction that state ownership weakens the internal monitoring mechanism of the listed firms leaving opportunities for management to commit fraud. This is in line with the literature (see Shleifer and Vishny, 1986; Clarke, 2003; Cheung et al., 2010; and Gul et al., 2010) that state ownership aggravates agency problems. Meanwhile, the fraudulent activities in non-SOEs are likely to be uncovered by the regulatory commission in that they lack political resources which could otherwise provide favourable regulatory conditions (Anderson, 2000; and Allen et al., 2005).

For SOEs, however, we find that the ratio of state ownership is negatively related to the incidence of regulatory enforcements against fraud. Although the literature suggests that SOEs with concentrated state ownerships are associated with even weaker corporate governance, they tend to affiliate with the central government which has the supreme power. The politically powerful affiliations of these fraudulent SOEs could bring certain privileges in the regulatory environment and help them to avoid the non-transparent selective inspections from the regulatory commission. Such privileges of political connection, however, have been substantially weakened by the new regulation "*Solutions for Listed Firm Checks*" promulgated in March 2001 to replace the old regulation "*Solutions to Carry Out Listed Firm Checks System*". This new regulation mandates regular and detailed fraud inspections on all listed firms to substitute for the practice of selective inspections, empowering the regulatory commission and increasing inspection severity (Chen et al., 2005). We document an increase in the incidence of regulatory enforcements on SOEs with larger state ownerships and richer in political resources following the promulgation of the new regulations; while the sanction incidence on non-SOEs is not significantly affected. This suggests that the fraud inspection and enforcement actions are subject to less political intervention under the new regulation. These findings exist in both the firm-year sample and the matching-firm sample, and are robust to the

controls of firm characteristics (i.e. size, growth), operating performance, corporate governance (i.e. ownership concentration, CEO duality, board size and board independence) as well as industry and region fixed effects.

Our findings contribute to the literature in several ways. This is the first study, to our knowledge, to compare the effects of state ownership on the incidence of regulatory enforcements against fraud between SOEs and non-SOEs. For the corporate governance literature, we empirically confirm the argument that state ownership damages the effectiveness of internal monitoring mechanisms. For the literature on legal and regulatory systems, we provide new evidence that state affiliation of both the listed firms and the regulatory commission harms regulatory independence and regulation enforcement. In addition, this is also the first study, to our knowledge, to examine the exogenous regulatory changes on the severity of fraud inspection. For the literature on economic reform, we show that the new regulation of "*Solutions for Listed Firm Checks*" yields a beneficial impact to this emerging stock market of China. Evidence of an increase in the incidence of regulatory enforcements in SOEs with rich political resources suggests a decline in the privilege of political connections, which in turn enhances regulatory enforcement, and improves shareholder protection and the investment environment. It adds to the literature on fraud by showing that not only internal monitoring mechanisms, but also external monitoring mechanisms contribute to enforcement against fraud.

The remainder of this paper is organized as follows. Section 2 reviews the literature and develops the testable hypotheses. Section 3 presents the research design and sample characteristics. Section 4 interprets the empirical results and Section 5 concludes.

2. Literature and Hypothesis

2.1. Internal Governance and Fraud

Board Characteristics

The board of directors is one of the most crucial vehicles in corporate governance mechanisms to provide internal monitoring. Poor oversight of management through weak corporate governance can provide opportunities for management to carry out fraud (Dechow et al., 1996). John and Senbet

(1998) find that board characteristics, including board independence, CEO turnover, board size and committee structure, determine board effectiveness, which consequently affects the incidence of fraud. Independent (outside) directors are believed to be able to increase the board's ability to monitor management effectively (Fama and Jensen, 1983) and enhance shareholder wealth maximization (Rosenstein and Wyatt, 1990). Beasley (1996) and Dechow et al. (1996) identify the important role of the independent (outside) directors in reducing the likelihood of financial statement fraud respectively from their samples of 75 firms from 1980 to 1991 and 92 similar firms from 1982 to 1992. Beasley et al. (2000) perform analysis of fraud within three volatile industries (technology, health care, and financial services). They notice the varying fraud techniques across industries and find a majority of outside directors to be less common in fraudulent firms compared with non-fraudulent industry benchmarks. Uzun et al. (2004) also have the same findings based on 133 fraudulent or criminal firms from 1978 to 2001. Evidence of emerging stock markets from Chen et al. (2006) and Firth et al. (2010) shows that outside directors and directors with an accounting or financial background help to reduce the fraudulent practice of Chinese listed firms.

In many listed firms, an audit committee is appointed to examine information accuracy and forms a part of the internal monitoring structure. Information accuracy helps to enhance the monitoring quality of the board and ensures the board remains vigilant. Although Beasley (1996) documents no evidence in his sample, Dechow et al. (1996) find that the presence of an audit committee helps to reduce fraud. Beasley et al. (2000) and Uzun et al. (2004) further indicate the importance of the composition of the audit committee: audit committees in fraudulent firms tend to have smaller percentages of outside and independent directors, and have lower meeting frequency. Chen et al. (2006) show that auditors with better quality, measured by the audit firm size, are more capable of deterring and correcting fraud.

In addition to the board of directors, a supervisory board serves as an additional monitoring organ for Chinese listed firms following the German corporate governance model. Dahya et al. (2003) find that investors care about the supervisory board report, but the supervisory board in most of the firms acts as a censored watchdog rather than an independent supervisor. This evidence does not justify the usefulness of the supervisory board in China. Jia et al. (2009) and Ding et al. (2011) show that the supervisory board only passively reacts to the regulatory enforcement and increased meeting frequency is not helpful in deterring fraud or recurrence of fraud.

Finally, although the characteristics of the management, such as the duality of CEO and Chairman roles and CEO tenure, influence corporate governance (John and Senbet, 1998), their effects on the likelihood of fraud have mixed results. There is no significant impact documented in Beasley (1996), Beasley et al. (2000), Uzun et al. (2004), and Chen et al. (2006), but there is in Dechow et al. (1996). Denis et al. (2006) show that option-based compensation could serve as an incentive for the management to engage in fraudulent activities.

Ownership Characteristics

Besides board characteristics, the ownership structure has also been found to play an important role in corporate governance. In China, 80% of the listed firms are state-owned-enterprises (SOEs) with the state as the dominant shareholder (Chen et al., 2009). State ownership is also prevalent in the privatized non-SOEs: although control has been transferred from the state to private investors as a result of privatization, the state often retains a proportion of ownership as a non-dominant or minority shareholder (Chen et al., 2008). State ownership and especially concentrated state ownership could aggravate the agency problem (Shleifer and Vishny, 1986) in that state shareholders tend to operate firms for political purposes such as controlling sensitive industries (Clarke, 2003) and reducing local unemployment rate (Fan et al., 2007), instead of shareholder wealth maximization. Cheung et al. (2010) empirically verify that state ownership in both SOEs and non-SOEs is negatively associated with the corporate governance quality index (CGI) constructed in their study. In addition, state ownership is found to weaken the information environment of listed firms (Gul et al., 2010), and this further holds back the monitoring functions of the board and outside investors. These results suggest that state ownership directly and indirectly undermines the effectiveness of the internal monitoring mechanisms, thereby increasing the chances of fraudulent activities.

2.2. External Governance and Fraud

Outside Investors

In addition to internal governance, listed firms are subject to other sources of oversight or supervision. From the culture perspective, Lu (1997 and 2008) argues that Chinese traditional Confucian ethics may help to develop business ethics. More importantly, outside investors, through

the wealth implication of stock price, form an important part of the external monitoring mechanism: disclosed fraud leads to a depression of the stock price, and consequently decreases in shareholders' wealth and executives' equity-based compensation. In the Chinese stock market, however, state shareholders and executives in SOEs are much less concerned with the stock price because the state shares are subject to imposed trading constraints and are restricted from free trading [1] (Chen et al., 2008; Hou and Howell, 2011), and because the executives' compensations in SOEs are found to be not significantly related to the stock return (Firth et al., 2006). Hence, the wealth implication of stock price tends to be inadequate to urge state shareholders and executives in SOEs to deter fraudulent activities.

Financial Institutions

Disclosed fraud can jeopardize reputation and credibility of the fraudulent firm and consequently affect its ability to raise capital and its cost of capital. When the share price drops, the firms need to issue more shares to raise the same amount of capital from the equity market. Institutional investors, such as fund companies, may refuse to purchase the issued shares due to the decreased liquidity and information quality following the announcement of fraud as documented in Dechow et al. (1996), Chen et al. (2005) and Firth et al. (2010). Likewise, the damaged credibility could also prevent fraudulent firms from getting loans from banks, which are concerned about the accuracy of their accounting statements. However, firms with state ownership are less affected. Although the Chinese banking sector has been experiencing considerable reforms in various aspects, the state still controls virtually all of the sizable banks in China, and political connections continue to play an important role in gaining access to bank finance. Frith et al. (2009) note that the state shareholder, no matter whether it is in a dominant position or not, is able to help either state-owned or private firm to obtain bank loans. Khwaja and Mian (2005) show that politically connected firms are able to borrow 45% more from government banks than non-connected firms. In like manner, almost all securities companies are controlled by the government (Firth et al., 2010), and politically-connected issuing firms enjoy significant benefits of their preference (Francis et al., 2009). Given these institutional features, firms with state ownership in the Chinese stock market tend to be less affected by the damaged credibility and thus have less strong incentives to ensure that fraud does not occur.

Chinese Legal and Regulatory Systems

Allen et al. (2005) indicate the underdevelopment of the legal system in China by pointing out government interference in the legal system and the lack of legal enforcement. The legal system provides few options for minority investors to take private enforcement action against the misconduct of blockholders (Jiang et al., 2010). Chinese courts are believed to be not politically powerful and consequently are reluctant to take cases involving (politically) powerful defendants (Clarke, 2003); and this is even more true for the main securities regulator CSRC (see Anderson, 2000, Chen et al., 2005; and Chen et al., 2006). Among others, the duties for this regulatory commission include formulating regulations for the securities markets, examining and supervising listed firms. The regulatory commission is not independent of the government, but financed and answerable to the State Council (Chen et al., 2005), which also appoints its senior directors. Meanwhile, many of its supervisees, i.e. listed firms, are also affiliated with the government. Chen et al. (2009) show that around 14% of listed firms are affiliated to central government, and around 66% of the listed firms are affiliated to the provincial, local governments or their agencies known as the state asset management bureaus. Fan et al. (2007) further show that 27% of the CEOs of the newly partially privatized firms in China are former or current government bureaucrats. Li et al. (2006) observe that, due to the excessive government regulation and the weak legal system, private entrepreneurs also try to participate in politics in order to acquire certain privileges or resources brought about by their political connections. This is backed up by the argument in Chow (1997) that China has the appearance of a semi-legal system with the other half being supplied by the informal (political) network. Because politics and adjudication are often mixed and there is no effective judicial independence, to what extent the laws and regulations are enforced depends partially on the political resources of the involved parties (Chen, 2003). The SOEs with larger state ownerships are believed to be endowed with richer political resources as they are more commonly affiliated to the central government (Chen et al., 2009), and the state has a stronger intention to maintain its influence in these firms, and helps to secure favourable legal and regulatory conditions (Allen et al., 2005).

The regulatory commission used to carry out fraud inspection in accordance with the previous regulation of "*Solutions to Carry Out Listed Firm Checks System*" promulgated in December 1996, which was believed to be far too generous in that the regulatory commission adopted a practice of selective inspection on the listed firms (Chen et al., 2005). The non-transparent timing and sampling method to inspect listed firms were solely and privately decided by the regulatory commission. Due to the aforementioned institutional features, which gives rise to a conflict of interest between the "fair play" in practicing regulation and the monopoly power of the state (Allen et al., 2005), the

regulatory commission may choose not to inspect the firms with rich political resources. Fraudulent activities are thus less likely to be uncovered or incur enforcement actions.

The situation could be mitigated by the new and more severe regulation "*Solutions for Listed Firm Checks*" promulgated to replace the "*Solutions to Carry Out Listed Firm Checks System*" in March 2001. The new regulation abolished selective inspection and induced regular checks and special checks, which are more comprehensive and detailed (Chen et al., 2005). The regulatory checks mandates the inspection of all listed firms including these with rich political resources, and the special checks assigns specialised inspection items. The new regulation is therefore expected to increase the authority of the regulatory commission and inspection severity by putting the firms with rich political resources under increased scrutiny. Although the new regulation does not make the regulatory commission independent, or guarantee that every fraud in these firms is uncovered and incurs effective enforcement, it is expected to increase the incidence of disclosed frauds and subsequent regulatory enforcements in these firms.

2.3. Hypotheses Development

The Detection of Fraud

Regulatory enforcement can be taken only against disclosed fraud, which is a subset of total fraud. There may be some fraudulent activities uncovered in the inspections. We hereby express regulatory enforcement against disclosed fraud (*Fraud*) as a function of total fraud and inspection severity as follows:

$$Fraud = f\,(Total\ Fraud,\ Inspection\ Severity) \qquad (1)$$

Both *Total Fraud* and *Inspection Severity* are expected to positively influence *Fraud* in that firms with more fraudulent activities are more likely to be found out, and fraudulent activities are more likely to be identified under closer scrutiny. As *Total Fraud* is unobservable, *Fraud* is used as its proxy in the literature, the impact of the *Inspection Severity*, however, tends to be ignored. Given the discussed institutional features of the Chinese stock market, we argue that inspection severity differs across listed firms with different entity. In particular, non-SOEs are treated impartially in fraud inspections because regulatory commission is independent of them; whereas SOEs are treated favourably because of the mutual political affiliation between them and the regulatory commission.

Non-SOEs

Given the institutional features that the state still retains some ownership in many privatised firms i.e. non-SOEs (Chen et al., 2008), and the evidence that state ownership holds back the information environment (Gul et al., 2010), corporate governance (Cheung et al., 2010), and consequently internal monitoring mechanisms, fraudulent activities are expected to be more frequent in non-SOEs with large state ownerships than non-SOEs with low or nil state ownership. Despite having some retained state ownership, non-SOEs are not affiliated with the government, and therefore lack the political resources to avoid fraud inspection to conceal misconducts. Hence, fraudulent activities in non-SOEs are likely to be uncovered and to incur enforcement actions. We thereby hypothesize that:

H1. *In non-SOEs, state ownership increases the incidence of regulatory enforcements against fraud.*

SOEs

Although state ownership of SOEs hampers the internal monitoring mechanism to deter fraudulent activities, SOEs have government affiliation which plays an important role in the semi-legal system (Chow, 1997) and which could influence the inspection severity of the regulatory commission to bring about favourable regulatory conditions. This is expected to be more pronounced in the SOEs with larger state ownership, because their political connection tends to stronger and they tend to affiliate with the ultimate authority i.e. the central government (Chen et al., 2009). Controlled by the government, the regulatory commission is reluctant to enforce regulation effectively when government's affiliates of this kind are involved, and may even choose not to put these firms under scrutiny. This is possible when inspections take place in selected listed firms only under the regulation of "*Solutions to Carry Out Listed Firm Checks System*" promulgated in 1996. We hereby hypothesize that:

H2. *In SOEs, state ownership decreases the incidence of regulatory enforcements against fraud.*

New Regulation

The new regulation "*Solutions for Listed Firm Checks*" promulgated in 2001 endows the regulatory commission with greater authority and enhances the inspection severity by mandating "regular checks" on all listed firms and "special checks" on specialised items to replace the non-transparent "selective checks" required in the previous regulation "*Solutions to Carry Out Listed Firm Checks System*" promulgated in 1996 (Chen et al., 2005). The SOEs with large state ownership, which have

poor corporate governance but rich political resources, can no longer avoid inspection, and their fraudulent activities become more likely to be uncovered and incur regulatory enforcements than previously. We thereby hypothesize that:

H3. *The promulgation of the new regulation "Solutions for Listed Firm Checks" in 2001 is associated with an increase in the incidence of regulatory enforcements against fraud in the SOEs with larger state ownership.*

3. Research Design

3.1. Research Design

To empirically test the predictions in hypotheses H1and H2, we apply a probit regression model as follows:

$$Fraud = \alpha_0 + \alpha_1 SOE + \alpha_2 SOR + \alpha_3 SOE.SOR + \sum_{k=1}^{k} \alpha_{k+3} Control_k + \varepsilon \qquad (2)$$

where *Fraud* is a dummy variable assigned to 1 if the firm is subject to a regulatory enforcement against fraud, and 0 otherwise; *SOE* is a dummy variable assigned to 1 for state-owned enterprises, and 0 otherwise. *SOR* is the state ownership ratio which is measured by the percentage of shares held by the state. Note that the state retains minority ownership in some privatized listed firms. *SOE* and *SOR* are thereby interacted. A set of 1-year lagged control variables are incorporated to control the firm characteristics, firm operating performance, and corporate governance, including the natural logarithm of market capitalisation (*LnMC*), price-to-book ratio (*PB*), industry-median adjusted return on assets (*IROA*), dummy variable of ownership concentration (*OwnCon* is equal to 1 if the Herfindahl index based on the top 10 largest blockholders of the firm is above the median of the yearly observations, and 0 otherwise), dummy variable of foreign control (*Foreign* is equal to 1 if the dominant shareholder of the firm is a foreign investor, and 0 otherwise), dummy variable of duality (*Duality* is equal to 1 if CEO holds the position of the board chair, and 0 otherwise), dummy variable of board meetings (*DBmeeting* is equal to 1 if the number of board meetings is above the median value of the yearly observations, and 0 otherwise), dummy variable of board size (*DBsize* is equal to 1 if the number of board members is above the median value of the yearly observations, and 0 otherwise), the dummy variable of the ratio of the

independent directors in the board (*DInd* is equal to 1 if the ratio is above the median value of the yearly observations, and 0 otherwise), and the dummy variable of the supervisory board size (*DSsize* is equal to 1 if the number of supervisory board members is above the median value of the yearly observations, and 0 otherwise). The control variables are lagged for 1-year to deal with the causality issue. Industry and region dummies are also included to control for the impact of industry and regional effects. The industry dummies are constructed based on the first two digits of the GICS (Global Industry Classification Standard) codes. The region dummies are constructed by following Frith et al. (2006), in which the firms are grouped into four different regions based on the levels of economic development: 1. Shanghai and Shenzhen; 2. The more developed areas including the open cities and provinces along the coast; 3. The inland provinces; and 4. the least developed area in the north-western part of the country. In Equation (2), coefficients α_2 and α_3 respectively capture the impacts of state ownership on the incidence of regulatory enforcement against fraud in non-SOEs and in SOEs. If $\alpha_2 > 0$ ($\alpha_3 < 0$), then state ownership is associated with higher (lower) incidences of enforcement actions in non-SOEs (SOEs), supporting our prediction in hypothesis H1 (H2).

To test hypothesis H3, we apply the following probit regression model in the samples of SOEs and non-SOEs respectively:

$$Fraud = \alpha_0 + \alpha_1 PostNR + \alpha_2 SOR + \alpha_3 PostNR.SOR + \sum_{k=1}^{k} \alpha_{k+3} Control_k + \varepsilon \qquad (3)$$

where *Fraud* remains the dummy variable assigned to 1 if the firm is subject to regulatory enforcement against fraud, and 0 otherwise; *PostNR* is a dummy variable assigned to 1 for the years after the promulgation of the new regulation "*Solutions for Listed Firm Checks*" i.e. 2001 onwards, and 0 otherwise; *SOR* is the state ownership ratio measured by the percentage of shares held by the state. *SOR* and *PostNR* are interacted to capture the impact of the new regulation on the incidence of regulatory actions among firms with larger state ownership. The same set of control variables are incorporated to control the firm characteristics, firm operating performance, and corporate governance. These control variables remain subject to a 1-year lag to cope with the causality problem. If $\alpha_3 | SOE > 0$ (i.e. the coefficient of the interaction term, *PostNR.SOR*, in the sample of SOEs is significantly positive) the hypothesis H3 is supported in the sense that the new regulation improves the regulatory enforcement among the firms with rich political resources. In fact, this also reinforces our hypothesis H2 because if the smaller incidence of the regulatory enforcements on these SOEs were not due to the favourable regulatory condition brought by their political

connections as we argued, but other underlying reasons such as the argument of their good corporate governance as a result of the alignment effect of the ownership concentration in Ding et al. (2007), the new regulation with increased inspection severity would not give rise to higher incidence of the regulatory enforcement actions on them. We predict that the $\alpha_3 | non - SOE$ (i.e. the interaction term, *PostNR.SOR*, in the sample of non-SOEs) is not significant in that the regulatory commission is independent of the non-SOEs, and treats them impartially in fraud inspection at all times.

3.2. Sample Description and Characteristics

The data of regulatory enforcement against fraud, firm identity (i.e. SOE or non-SOE); firm characteristics, operating performance and the corporate governance indicators are taken from the CCER/Sinofin (China Centre for Economic Research). The state ownership ratio and the corporate governance variables are from GTA/CSMAR (China Stock Market and Accounting Research). The sample period covers a decade from 1999 to 2008. We take 1999 as the starting year because the 1-year lagged corporate governance variables used in this study are only available since 1998 in the database and also because there were overlapping supervision responsibilities of the regulatory commission with other agency bodies until 1998 (Chen et al., 2005). To perform empirical analysis, we construct two sets of sample, namely a firm-year sample and a matching-firm sample as a robustness checks of each other. The matching-firm sample is constructed in the same way as Jia et al. (2009) that each fraudulent firm is matched with a non-fraudulent firm within 20% of its size, measured by the book value of total assets, from the same industry.

The yearly and industry distributions of disclosed fraudulent activities and the fraudulent firms are presented in Table 1. In panel A, the numbers of disclosed fraudulent activities (*NFraud*), fraudulent firms (*FFirm*) and firms with multiple fraudulent activities (*MFFirm*) soared in 2001. The number of fraudulent SOEs, the ratio of fraudulent firms relative to total firms (*FFirm/Total*), and the ratio of fraudulent SOEs relative to the total SOEs (*SOEF/SOE*) also peak in the year of 2001, in which the new regulation "*Solutions for Listed Firm Checks*" was promulgated to increase the inspection severity. This is in support of our prediction about the effects of the new regulation in H3. Note that our observations are larger than that documented in Chen et al. (2006) because their data was manually collected from newspaper and perhaps with some omissions. Panel B shows the numbers of fraudulent activities and fraudulent firms in various industries. The ratio of disclosed fraudulent firms (*FFirm/Total*) is larger than the ratio of disclosed fraudulent SOEs (*SOEF/SOE*) across all

industries. Given the worse corporate governance of SOEs noted in the literature, this may imply their favourable regulatory conditions. The telecommunication services industry, which includes only 25 firm-year observations, is associated with the highest ratios of fraudulent firms and fraudulent SOEs. In addition, the ratios are also relatively high among consumer staples, information technology, and financial industries. This coincides with the argument of low-integrity in banks and investment banks in Jensen (2010). Beasley et al. (2000) also point out that the industry traits could affect the commission of fraud. We therefore apply the industry fixed effects in our empirical analysis to make sure the results are not driven by a few industries.

4. Empirical Findings

4.1. Descriptive Statistics

Panel A and B of Table 2 respectively presents descriptive statistics of the variables in the firm-year sample and the matching-firm sample used in our analysis. In panel A, about 4% of firms are subject to regulatory enforcement against fraud. State-owned enterprises (SOEs) account for 73.09% of the total number of Chinese listed firms, and the overall mean (median) state ownership ratio is as large as 32.07% (34.63%), indicating the prevailing influence of the state. The ratio of firms with a foreign dominant shareholder is as small as 0.88%. Panel B compares the firm characteristics and corporate governance of the fraudulent firms and non-fraudulent firms in the matching-firm sample. For each fraudulent firm, a non-fraudulent firm of similar size (within 20% difference in the book value of total assets) from the same industry is matched to construct the matching-firm sample by following Jia et al. (2009). The fraudulent firms with missing control variables or matching firms are dropped, and the final sample includes 409 pairs of firms. It shows that the fraudulent firms are associated with larger size, worse past operating performance, CEO duality, and lower board meeting frequency. This preliminary result suggests the importance of corporate governance to deter fraud.

Table 3 presents the correlation matrix between the main variables. The regulatory enforcement against fraud (*Fraud*) is negatively related to both the state entity (*SOE*) and state ownership ratio (*SOR*), but positively related to the promulgation of the new regulation (*PostNR*). This is in support of our hypotheses. In addition, value firms, large firms, and firms with sound corporate governance are associated with lower incidence of enforcements actions. The negative correlation between past

operating performance and enforcement implies that the motivation of the firms to commit fraud is to prevent being delisted by the exchange. Chinese listed firms with 2-year consecutive losses will be "Specially Treated" and those with 3-year consecutive losses will be delisted (see Liu and Lu, 2007). On the contrary, the major motivations for earnings manipulation in the US have been identified as the desire to attract external financing at low cost (Dechow et al., 1996) and to obtain an increase in share price (Kellogg and Kellogg, 1991).

4.2. Test of Hypothesis 1 and 2

Table 4 presents the results for the test of hypotheses H1 and H2. We examine and compare the impact of state ownership (*SOR*) on the incidence of regulatory enforcements against fraud in SOEs and non-SOEs by regressing the dependent dummy variable (*Fraud*) on the state entity (*SOE*), the state ownership ratio (*SOR*) and their interaction term (*SOE.SOR*) as shown in Equation (2). The regressions I and II in Table 4 are based on firm-year sample while regressions III and IV are based on matching-firm sample. To construct the matching-firm sample, each fraudulent firm is matched with a non-fraudulent firm within 20% difference of size in terms of book value from same industry (See Jia et al., 2009). The regressions I and III include only the key variables and 1-year lagged firm characteristics while the regression II and IV also incorporate 1-year lagged control variables of firm performance, corporate governance, as well as industry and region dummies.

Capturing the impact of state ownership in non-SOEs, the coefficients of state ownership (*SOR*) in regression I (0.5916) and III (0.8640) are significantly positive. This shows that the non-SOEs with a larger state ownership ratio, are more likely to be subject to regulatory enforcements against fraud, and therefore supports our hypothesis H1. On the one hand, non-SOEs with larger state ownership have less effective internal monitoring mechanisms because of the documented worse corporate governance and information environment in the literature, giving increased opportunities for fraudulent activities; on the other hand, non-SOEs are not officially affiliated with the government and therefore lack political affiliation to help them to avoid fraud inspection and/or enforcement actions. With 1 standard deviation increase (i.e. 0.2527 in the firm-year sample, and 0.2469 in the matching-firm sample as shown in Table 2) in the state ownership, the results from regression I and III respectively suggest 14.95% and 21.33% rise in the incidence of regulatory actions in non-SOEs, implying the economic significance of the results.

The impact of the state ownership in SOEs is captured by the coefficients of the interaction term *SOE.SOR*, which are, as predicted in hypothesis H2, significantly negative in regression I (-0.9797) and III (-1.2047). Although state ownership has been found to exaggerate the agency problem in the literature, it also reflects the interests and intention of the government to maintain its influence and strengthens the political connection of SOEs. Chen et al. (2009) show that SOEs with higher state ownership tend to affiliate with the central government i.e. the supreme authority. The political affiliations of higher ranks are more likely to bring about privileges for the SOEs in the regulatory system, and therefore decrease the incidence of regulatory enforcement actions on them. With 1 standard deviation increase (i.e. 0.2527 in the firm-year sample, and 0.2469 in the matching-firm sample as shown in Table 2) in the state ownership, the results of regression (I) and (III) respectively suggest 24.76% and 29.74% reduction in the incidence of enforcement actions in SOEs, showing that the economic significance of the impact.

Hypotheses H1 and H2 are, again, empirically verified in regressions II and IV with all control variables incorporated and with industry/region fixed effects applied. The coefficients of *SOR* (*SOE.SOR*) remain significantly positive (negative) as 0.7179 and 0.9565 (-0.7693 and -1.1662) in regression II and IV respectively; and the economic significance remains strong in the presence of control variables. Among the control variables, the operating performance (*IROA*) and the dummy variable of meeting frequency are significantly negative in both samples. This confirms the argument in Liu and Lu (2007) that firms with poor operating performance have incentives to manage earnings to prevent being de-listed. Moreover, in an untabulated analysis, we replace the industry-median adjusted performance measure (*IROA*) with the raw measure (*ROA* i.e. Return-on-asset) and a dummy variable of the imminent de-listing risk (*ST* is equal to 1 if the firm is labeled as "special treated" by the exchange for its consecutive losses, and 0 otherwise), and the results are consistent. In particular, firms with 1 standard deviation decrease in *IROA* and firms being labeled as "special treated" are associated with about one third increase in the incidence of regulatory actions. This has important policy implication for the regulatory commission and practical implication for the board that firms with poor performance and delisting risk deserve severe inspection and monitoring in order to better protect the investors. In addition, the firms with meeting frequency above the median is associated with 22.30% (31.75%) lower possibility of receiving sanctions from the regulatory commission as suggested in regression II (IV). This is in line with the argument in Uzun et al. (2004) that meeting frequency could make boards better perform their duties and enhance corporate governance. In an untabulated robustness check, we incorporate 1-year lagged key variables to address the potential problem of endogeneity, adjust the clustering standard

errors in the firm-year sample, and perform the analysis in a sub-sample of 446 cases of "fraudulent statement and/or withholding disclosure". The results remain consistent with the findings in Table 4.

4.3. Test of Hypothesis 3

Table 5 presents the results for the test of hypothesis H3. We separately examine the impact of an exogenous change in the inspection severity brought about by the new regulation of "*Solutions for Listed Firm Checks*" promulgated in 2001 on the regulatory enforcement against fraud in SOEs and non-SOEs. We regress the regulatory enforcement against the state ownership ratio (*SOR*), the new regulation dummy (*PostNR*), and their interaction term (*SOR.PostNR*) as shown in Equation (3). Again, regressions I and II (III and IV) are applied on the firm-year sample (matching-firm sample). Regression I and III (II and IV) are tested in the sample of SOEs (non-SOEs).

Capturing the impact of the regulatory change in the SOEs with larger state ownership ratio (*SOR*), the coefficients of the interaction term (*SOR.PostNR*) are significantly positive in regression I (1.2629) and III (3.9804). This supports our hypothesis H3 by demonstrating that, albeit their rich political resources, the SOEs with high state ownership and consequently poor corporate governance become more likely to be sanctioned by the regulatory commission under the new severe regulatory conditions. When the inspection of more detailed items on all listed firms is mandated by the regulation, these SOEs can no longer avoid inspections, and the fraudulent activities are more likely to be uncovered. Specifically, for listed firms with the median level of state ownership in the firm-year sample (i.e. 34.63% as shown in Table 2), the new regulation raises their incidence of regulatory enforcement actions by 43.76%, showing the economic significance of the impact. This result in fact reinforces our hypothesis H2 in that the documented lower incidence of sanction among the SOEs with higher state ownership in Table 4 is not due to better corporate governance, but favorable regulatory conditions. If the result were due to better corporate governance and lower occurrence of fraudulent activities, this regulatory change would not affect them. In addition, it is worth noting that the sum of the coefficients of *SOR* and *SOR.PostNR* is close to 0, suggesting that the privilege of SOEs with rich political resources are roughly eliminated in the new regulatory condition.

As we predicted, the impact of the new regulation is not significant among the SOEs with inferior political resources and non-SOEs independent of the regulatory commission. Because they are not politically powerful enough to influence the ministry-level ranked regulatory commission to enjoy privilege in the regulatory system, they are treated more or less impartially anyway, and the

regulatory change does not affect their regulatory condition. The results in Table 5 are robust with the control of firm characteristics, operating performance, corporate governance, and industry/region fixed effects. Consistent with the finding in Table 4, industry-adjusted performance (*IROA*) and dummy variable of meeting frequency (*DBmeeting*) remain significantly negative. As the sample period prior to and after the regulatory change is asymmetric in our sample, the documented impact may be driven by the recent years rather than the few years following the reform. We therefore perform the analysis based on a smaller sample of 2 years before and after the regulatory change (i.e. 1999 to 2002) as robustness check, and find that the untabulated results remain consistent with the findings in Table 5.

5. Conclusion

China has been experiencing dramatic development in its capital market, but the financial regulatory system and investor protection remain weak. The main institutional feature, which holds back regulatory environment, is the dual roles played by the state. On the one hand, it controls more than 70% of the listed firms (known as SOEs, state-owned enterprises), and retains state ownership in half of privatised non-SOEs; on the other hand, it controls the regulatory commission known as CSRC (China's Securities Regulatory Commission). This paper documents the different effects of state ownership on the regulatory enforcement actions across firms with different entities. In non-SOEs, the retained state ownership increases the incidence of regulatory enforcement against fraud in that the state ownership exaggerates the agency problem leaving chances for fraudulent activities. These misconducts are likely to be uncovered because the regulatory commission is independent of the non-SOEs and treats them impartially in the fraud inspection. In SOEs, however, the state ownership decreases the incidence of regulatory enforcement against fraud. Although the corporate governance in SOEs with large state ownership tends to be worse, their strong political connection could help to secure favourable regulatory conditions and extricate them from fraud inspections. Such privilege has been found to be mitigated by the new regulation "*Solutions for Listed Firm Checks*" promulgated in March 2001, which increases the inspection severity by mandating more comprehensive and detailed inspection on all listed firms.

Our results contribute original evidence of the impacts of state ownership on the regulatory enforcement and investor protection. Our results also have some practical and policy implications. The results suggest enhance auditing and fraud inspections on the listed firms with poor past operating performance and the risk of de-listing as they are more likely to commit fraud. The results

also show that the government's reluctance to relinquish influence in the privatised non-SOEs through retained state ownership hinder corporate governance. Finally, the results confirm the improvement of the Chinese regulatory environment following the regulatory change. The finding implies that although the state will maintain its influence in the capital market in the foreseeable future, the improvement of investor protection is still feasible through regulatory reform and development.

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Note

[1] The imposed trading constraints in the Chinese stock market have been gradually relaxed in the Split Share Structure Reform which was launched in 2005 (See Firth et al., 2010; Hou and Howell, 2011).

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Table 1

Table 1 presents a yearly and industry breakdown of our sample. The sample period covers 1999-2008 and includes stocks in both Shanghai and Shenzhen exchanges. In panel A, *FraudN* indicates the number of disclosed fraudulent activities. *FFirm* is the number of fraudulent firms. *MFFirm* is the number of firms with multiple fraudulent activities. *FSOE* is the number of fraudulent SOEs (State-owned Enterprises). *Total* and *SOE* respectively indicates the number of listed firms and SOEs in the Chinese stock market. In panel B, the industries are classified based on the first two digits of the GICS (Global Industry Classification Standard) codes.

Panel A

Year	*FraudN*	*FFirm*	*MFFirm*	*FSOE*	*Total*	*SOE*	*SOE/ Total*	*FSOE/ FFirm*	*FFirm/ Total*	*SOEF/ SOE*
1999	13	13	0	7	911	768	84.30%	53.85%	1.43%	0.91%
2000	17	17	0	11	1048	869	82.92%	64.71%	1.62%	1.27%
2001	73	67	5	49	1125	925	82.22%	73.13%	5.96%	5.30%
2002	60	50	8	40	1193	929	77.87%	80.00%	4.19%	4.31%
2003	56	45	10	31	1257	923	73.43%	68.89%	3.58%	3.36%
2004	70	60	10	33	1352	934	69.08%	55.00%	4.44%	3.53%
2005	100	69	26	34	1351	934	69.13%	49.28%	5.11%	3.64%
2006	97	71	21	32	1410	916	64.96%	45.07%	5.04%	3.49%
2007	79	61	15	27	1526	921	60.35%	44.26%	4.00%	2.93%
2008	39	35	2	18	1599	954	59.66%	51.43%	2.19%	1.89%

Panel B

	FraudN	*FFirm*	*MFFirm*	*FSOE*	*Total*	*SOE*	*SOE/ Total*	*FSOE/ FFirm*	*FFirm/ Total*	*SOEF/ SOE*
Energy	17	14	1	7	339	283	83.48%	50.00%	4.13%	2.47%
Materials	100	81	17	52	2500	1962	78.48%	64.20%	3.24%	2.65%
Industrials	88	72	14	41	2580	1872	72.56%	56.94%	2.79%	2.19%
Consumer Discretionary	113	94	16	65	2677	1866	69.70%	69.15%	3.51%	3.48%
Consumer Staples	76	61	10	39	951	697	73.29%	63.93%	6.41%	5.60%
Health Care	41	32	8	13	884	526	59.50%	40.63%	3.62%	2.47%
Financials	45	38	6	21	1009	576	57.09%	55.26%	3.77%	3.65%
Information Technology	87	66	20	30	1207	750	62.14%	45.45%	5.47%	4.00%
Telecommunication Services	7	4	1	2	25	18	72.00%	50.00%	16.00%	11.11%
Utilities	20	16	4	12	556	501	90.11%	75.00%	2.88%	2.40%
Unclassified	10	10	0	0	44	22	50.00%	0.00%	51.82%	0.00%

Table 2

Panel A and B respectively present the summary statistics of the variables in the firm-year sample and the matching-firm sample. The sample period covers 1999-2008. *Fraud* is a dummy variable assigned to 1 if the firm is subject to a regulatory enforcement against disclosed fraud, and 0 otherwise. *SOE* is a dummy variable assigned to 1 for state-owned enterprises, and 0 otherwise. *SOR* is the state ownership ratio which is measured by the percentage of shares held by the state. *PostNR* is a dummy variable assigned to 1 for the years after the promulgation of the new regulation "*Solutions for Listed Firm Checks*" i.e. 2001 onwards, and 0 otherwise. The 1-year lagged control variables include natural logarithm of market capitalisation (*LnMC*), price-to-book ratio (*PB*), industry-median adjusted return on asset (*IROA*), dummy variable of ownership concentration (*OwnCon* is a dummy variable which is equal to 1 if the Herfindahl index based on the top 10 largest blockholders of the firm is above the median of the yearly observations, and 0 otherwise), dummy variable of foreign control (*Foreign* is equal to 1 if the dominant shareholder of the firm is a foreign investor), dummy variable of duality (*Duality* is equal to 1 if CEO holds the position of the board chair, and 0 otherwise), dummy variable of board meetings (*DBmeeting* is equal to 1 if the number of board meetings is above the median of the yearly observations, and 0 otherwise), dummy variable of board size (*DBsize* is equal to 1 if the number of board members is above the median of the yearly observations, and 0 otherwise), the dummy variable of the ratio of the independent directors in the board (*DInd* is equal to 1 if the ratio is above the median of the yearly observations, and 0 otherwise), and the dummy variable of the supervisory board size (*DSsize* is equal to 1 if the number of supervisory board members is above the median of the yearly observations, and 0 otherwise). *, **, and *** denotes 10%, 5%, and 1% levels of significance.

Panel A. Descriptive Statistics of the Firm-Year Sample

	Mean	Std. Dev.	25%	Median	75%	Obs.
Fraud	0.0394	0.1945	0	0	0	11456
SOE	0.7309	0.4435	0	1	1	11456
SOR	0.3207	0.2527	0.0068	0.3463	0.5396	11456
PostNR	0.8610	0.3460	1	1	1	11456
LnMC	20.5109	0.9349	19.8685	20.4257	21.0333	11456
PB	4.2283	4.1464	1.9962	3.1765	5.0905	11456
IROA	-0.0015	0.0186	-0.0055	0.0001	0.0068	11456
OwnCon	0.5082	0.5000	0	1	1	11456
Foreign	0.0088	0.0935	0	0	0	11456
Duality	0.0169	0.1290	0	0	0	11456
DBmeeting	0.5850	0.4927	0	1	1	11456
DBsize	0.3507	0.4772	0	0	1	11456
DInd	0.5904	0.4918	0	1	1	11456
DSsize	0.9060	0.2918	1	1	1	11456

Panel B. Descriptive Statistics of the Matching-Firm Sample

	Matching-Firm Sample			Fraudulent Firms			Non-fraudulent Matching Firms			Difference in Means
	Median	Mean	Std. Dev.	Median	Mean	Std. Dev.	Median	Mean	Std. Dev.	*t*-Statistics
SOE	1	0.6186	0.4860	1	0.6015	0.4902	1	0.6357	0.4818	-1.0322
SOR	0.2805	0.2853	0.2469	0.2802	0.2780	0.2435	0.2808	0.2925	0.2504	-0.8911
LnMC	20.0892	20.1461	0.8847	20.1195	20.2085	0.8917	20.0345	20.0838	0.8742	3.6932***
PB	3.2750	4.4485	4.7564	3.2678	4.5791	5.0609	3.2790	4.3178	4.4335	0.9236
IROA	-0.0043	-0.0154	0.0295	-0.0100	-0.0208	0.0295	-0.0020	-0.0101	0.0286	-6.5453***
OwnCon	0	0.3826	0.4863	0	0.3570	0.4797	0	0.4083	0.4921	-1.6186
Foreign	0	0.0037	0.0605	0	0.0024	0.0494	0	0.0049	0.0698	-0.5769
Duality	0	0.0147	0.1203	0	0.0122	0.1100	0	0.0171	0.1299	1.6703*
DBmeeting	0	0.4878	0.5002	0	0.4230	0.4946	1	0.5526	0.4978	-3.7050***
DBsize	0	0.3289	0.4701	0	0.3178	0.4662	0	0.3399	0.4742	-0.6722
DInd	1	0.5966	0.4909	1	0.6039	0.4897	1	0.5892	0.4926	0.5566
DSsize	0	0.3289	0.4701	1	0.9095	0.2872	1	0.8924	0.3102	0.8680
Obs.	818			409			409			409

Table 3

This table presents the correlation matrix of the variables used in our analyses. The sample period covers 1999-2008. *Fraud* is a dummy variable assigned to 1 if the firm is subject to a regulatory enforcement against disclosed fraud, and 0 otherwise. *SOE* is a dummy variable assigned to 1 for state-owned enterprises, and 0 otherwise. *SOR* is the state ownership ratio which is measured by the percentage of shares held by the state. *PostNR* is a dummy variable assigned to 1 for the years after the promulgation of the new regulation "*Solutions for Listed Firm Checks*" i.e. 2001 onwards, and 0 otherwise. The 1-year lagged control variables include natural logarithm of market capitalisation (*LnMC*), price-to-book ratio (*PB*), industry-median adjusted return on asset (*IROA*), dummy variable of ownership concentration (*OwnCon* is a dummy variable which is equal to 1 if the Herfindahl index based on the top 10 largest blockholders of the firm is above the median of the yearly observation and 0 otherwise), dummy variable of foreign control (*Foreign* is equal to 1 if the dominant shareholder of the firm is a foreign investor, and 0 otherwise), dummy variable of duality (*Duality* is equal to 1 if CEO holds the position of the board chair, and 0 otherwise), dummy variable of board meetings (*DBmeeting* is equal to 1 if the number of board meetings is above the median, and 0 otherwise), dummy variable of board size (*DBsize* is equal to 1 if the number of board members is above the median, and 0 otherwise), the dummy variable of the ratio of the independent directors in the board (*DInd* is equal to 1 if the ratio is above the median, and 0 otherwise), and the dummy variable of the supervisory board size (*DSsize* is equal to 1 if the number of supervisory board members is above the median, and 0 otherwise). * denotes 1% level of significance.

	Fraud	*SOE*	*SOR*	*PostNR*	*LnMC*	*PB*	*IROA*	*OwnCon*	*Foreign*	*Duality*	*DBmeeting*	*DBsize*	*Dind*	*DSsize*
Fraud	1													
SOE	-0.0437*	1												
SOR	-0.0426*	0.6173*	1											
PostNR	0.0715*	-0.1313*	-0.0551*	1										
LnMC	-0.0791*	0.1343*	0.0389*	0.1359*	1									
PB	0.0441*	-0.0491*	-0.0824*	-0.0568*	0.1248*	1								
IROA	-0.2067*	0.0551*	0.0780*	0.0106	0.3179*	-0.0054	1							
OwnCon	-0.1043*	0.1954*	0.4253*	-0.1053*	0.0395*	-0.0684*	0.1029*	1						
Foreign	-0.0134	-0.1488*	-0.1014*	-0.0033	0.0218	0.0258*	-0.0067	-0.0335*	1					
Duality	-0.01	-0.0231*	-0.0334*	-0.0929*	0.0013	0.0292*	-0.0233*	-0.0359*	0.0228	1				
DBmeeting	-0.0458*	0.0573*	0.0611*	0.0114	-0.0507*	-0.0470*	-0.0026	0.0459*	-0.0036	-0.0124	1			
DBsize	-0.0554*	0.1129*	0.0803*	-0.1624*	0.0907*	-0.0379*	-0.0017	0.0079	-0.0127	0.0102	0.0397*	1		
DInd	-0.0458*	-0.1624*	-0.1177*	0.2383*	0.0541*	-0.1518*	0.0428*	-0.1336*	0.0095	-0.0374*	-0.0279*	0.0301*	1	
DSsize	-0.0288*	0.1140*	0.0934*	-0.0869*	0.0376*	-0.0124	0.006	0.0465*	-0.0344*	-0.1354*	-0.0141	0.1231*	0.0227*	1

Table 4

This table presents the empirical results of the following regression model from the firm-year sample and the matching-firm sample.

$$Fraud = \alpha_0 + \alpha_1 SOE + \alpha_2 SOR + \alpha_3 SOE.SOR + \sum_{k=1}^{k} \alpha_{k+3} Control_k + \varepsilon$$

, where dependent dummy variable *Fraud* is assigned to 1 if the firm is subject to a regulatory enforcement against disclosed fraud, and 0 otherwise; *SOE* is a dummy variable assigned to 1 for state-owned enterprises, and 0 otherwise; *SOR* is the state ownership ratio which is measured by the percentage of shares held by the state. The 1-year lagged control variables are defined in the appendix. The sample period covers 1999-2008. All t-statistics are reported and adjusted for heteroskedasticity. *, **, and *** denotes 10%, 5%, and 1% levels of significance.

	Firm-Year Sample				Matching-Firm Sample			
	Regression I		Regression II		Regression III		Regression IV	
SOE	0.0099	0.13	-0.0166	-0.22	0.0694	0.47	0.1425	0.85
SOR	0.5916	2.61***	0.7179	2.84***	0.8640	1.82*	0.9565	1.86*
SOE.SOR	-0.9797	-3.83***	-0.7693	-2.7***	-1.2047	-2.22**	-1.1662	-1.94*
LnMC	-0.2117	-7.76***	-0.0751	-2.46**	0.1204	2.28**	0.2074	3.31***
PB	0.0209	4.61***	0.0151	3.17***	0.0044	0.47	0.0065	0.54
IROA			-16.3393	-17.2***			-11.5812	-6.04***
OwnCon			-0.1748	-3.18***			0.0323	-0.28
Foreign			-0.6859	-1.55			-0.5791	-0.82
Duality			-0.2996	-1.38			-0.1106	-0.29
DBmeeting			-0.2230	-4.73***			-0.3175	-3.16***
DBsize			-0.0525	-1.03			-0.0936	-0.86
DInd			-0.0244	-0.49			0.0733	0.65
DSsize			-0.0658	-0.84			0.1713	1.04
Intercept	2.5400	4.6***	0.4576	-0.54	-2.4327	-2.32**	-4.6127	-3.16***
Industry	N		Y		N		Y	
Region	N		Y		N		Y	
Pseudo R^2	0.0362		0.1499		0.0103		0.0938	
Obs.	11,460				818			

Table 5

This table presents the empirical results of the following regression model from the firm-year sample and the matching-firm sample. Each sample is further split into SOEs (State-owned enterprises) and Non-SOEs.

$$Fraud = \alpha_0 + \alpha_1 PostNR + \alpha_2 SOR + \alpha_3 PostNR.SOR + \sum_{k=1}^{k} \alpha_{k+3} Control_k + \varepsilon$$

, where dependent dummy variable *Fraud* is assigned to 1 if the firm is subject to a regulatory enforcement against disclosed fraud, and 0 otherwise. *SOR* is the state ownership ratio which is measured by the percentage of shares held by the state. *PostNR* is a dummy variable assigned to 1 for the years after the promulgation of the new regulation "*Solutions for Listed Firm Checks*" i.e. 2001 onwards, and 0 otherwise. The 1-year lagged control variables are defined in the appendix. The sample period covers 1999-2008. All t-statistics are reported and adjusted for heteroskedasticity. *, **, and *** denotes 10%, 5%, and 1% levels of significance.

	Firm-Year Sample				Matching-Firm Sample			
	SOE		Non-SOE		SOE		Non-SOE	
	Regression I		Regression II		Regression III		Regression IV	
SOR	-1.2399	-2.92***	-0.1630	-0.13	-3.8181	-2.15**	0.3953	0.09
PostNR	0.2208	1.32	0.1664	0.84	-1.6238	-2.31**	0.2043	0.39
SOR.PostNR	1.2629	2.84***	0.9063	0.73	3.9804	2.23**	1.4895	0.32
LnMC	-0.1103	-2.83***	-0.1048	-1.86*	0.2202	2.7***	0.2287	1.86*
PB	0.0186	3.05***	0.0078	1.09	0.0062	-0.4	-0.0047	-0.19
IROA	-17.6626	-12.95***	-14.1147	-10.03***	-16.6383	-5***	-5.8114	-1.95*
OwnCon	-0.1629	-2.37**	-0.2075	-2.15**	-0.2227	-1.4	0.1300	0.62
Foreign	dropped		-0.6940	-1.68*	dropped		-0.6497	-0.96
Duality	-0.4306	-1.32	-0.1256	-0.39	-0.5657	-1	0.0380	0.06
DBmeeting	-0.1962	-3.26***	-0.3118	-3.72***	-0.2298	-1.73*	-0.3855	-1.94**
DBsize	-0.0533	-0.85	-0.2026	-2.02**	-0.1319	-0.91	-0.2975	-1.47
DInd	-0.1552	-2.48**	-0.1438	-1.4	0.0146	0.09	0.1475	0.63
DSsize	-0.0981	-0.94	-0.0792	-0.67	-0.0578	-0.24	0.5699	2.15**
Intercept	1.4356	1.4	1.4890	1.26	-3.1972	-1.66*	-4.7771	-1.78*
Industry	Y		Y		Y		Y	
Region	Y		Y		Y		Y	
Pseudo R^2	0.1635		0.1849		0.1370		0.1604	
Obs.	8,397		3,083		506		312	

Appendix: Variable Definitions

Fraud	A dummy variable assigned to 1 if the firm is subject to a regulatory enforcement against disclosed fraud, and 0 otherwise
SOE	A dummy variable assigned to 1 for state-owned enterprises, and 0 otherwise
SOR	The state ownership ratio which is measured by the percentage of shares held by the state.
PostNR	A dummy variable assigned to 1 for the years after the promulgation of the new regulation "*Solutions for Listed Firm Checks*" i.e. 2001 onwards, and 0 otherwise.

The following control variables are lagged for 1 year to solve the causality problem:

LnMC	The natural logarithm of market capitalisation
PB	Price-to-book ratio
IROA	Industry-median adjusted return on assets
OwnCon	A dummy variable equal to 1 if the the Herfindahl index based on the top 10 largest blockholders of the firm is above the median value of the yearly observations, and 0 otherwise
Foreign	A dummy variable equal to 1 if the dominant shareholder of the firm is a foreign investor, and 0 otherwise
Duality	A dummy variable equal to 1 if CEO holds the position of the board chair, and 0 otherwise
DBmeeting	A dummy variable equal to 1 if the number of board meetings is above the median value of the yearly observations, and 0 otherwise
DBsize	A dummy variable equal to 1 if the number of board members is above the median value of the yearly observations, and 0 otherwise
DInd	A dummy variable equal to 1 if the ratio of independent directors is above the median value of the yearly observations, and 0 otherwise
DSsize	A dummy variable equal to 1 if the number of supervisory board members is above the median value of the yearly observations, and 0 otherwise

The following industry and region dummies are also incorporated in our empirical analyses:

The industry dummies are constructed based on the first two digits of the GICS (Global Industry Classification Standard) codes.

The region dummies are constructed by following Frith et al. (2006), in which the firms are grouped into four different regions by the levels of economic development: 1. Shanghai and Shenzhen; 2. The more developed areas including the open cities and provinces along the coast; 3. The inland provinces; and 4. The least developed area in the north-western part of the country.